

**What is claimed is:**

1. A system for monitoring a patient via physiological data comprising:

a mobile transmitter including a sensor interface for coupling to sensors disposed on the patient for collecting physiological data therefrom, a digital controller having an input for analogue data from the sensor interface, an output for serial digital data derived from analogue data and an optical receiver and transmitter for establishing a bi-direction optical link for receiving mobile transmitter configuration data, and a radio frequency transmitter for radio transmission of the serial digital data in dependence upon stored mobile transmitter configuration data; and

a base station including an antenna array for receiving the wireless transmission from the mobile transmitter, a receiver including an input coupled to the antenna array, an interface having an output for digital data derived from the radio transmission and an input of mobile transmitter configuration data, and an optical receiver and transmitter for establishing a bi-direction optical link for transmitting mobile transmitter configuration data to an adjacent mobile transmitter, and a monitor coupled to the interface for display of the physiological data and for effecting transfer of mobile transmitter configuration data via the bi-directional optical link during operation of the mobile transmitter.

2. A system as claimed in claim 1 wherein the mobile transmitter configuration data includes a packet sync byte value.
3. A system as claimed in claim 1 wherein the mobile transmitter configuration data includes a word sync byte value
4. A system as claimed in claim 1 wherein the mobile transmitter configuration data includes a frequency of transmission.
5. A system as claimed in claim 1 wherein the mobile transmitter configuration data includes an identification number.

6. A system as claimed in claim 1 wherein the mobile transmitter configuration data includes a number of analogue channels.
7. A system as claimed in claim 1 wherein the mobile transmitter configuration data includes radio transmitter characteristics
- 5 8. A system as claimed in claim 7 wherein radio transmitter characteristics include scrambling parameters.
9. A system as claimed in claim 7 wherein radio transmitter characteristics include digital code sequence.
- 10 10. A system as claimed in claim 7 wherein radio transmitter characteristics include transmitter frequency.
11. A system as claimed in claim 7 wherein radio transmitter characteristics include data rate.
12. A system as claimed in claim 7 wherein the radio transmitter uses differential Quadrature phase shift keying modulation.
- 15 13. A system as claimed in claim 12 wherein the radio transmitter transmits a direct sequence modulated spread spectrum signal.
14. A system as claimed in claim 13 wherein the signal is transmitted in a radio frequency range of about 902 to 928 MHz.
- 20 15. A system as claimed in claim 13 wherein the signal is transmitted in a radio frequency range of about 2.4 to about 2.5 Ghz.
16. A system as claimed in claim 13 wherein the signal transmitted in a radio frequency range of about 5.725 to about 5.785 Ghz.
17. A mobile transmitter for monitoring a patient via physiological data comprising:

a sensor interface for coupling to sensors disposed on the patient for collecting physiological data therefrom;

a digital controller having an input for analogue data from the sensor interface, an output for serial digital data derived from analogue data and an optical receiver and transmitter for establishing a bi-direction optical link for receiving mobile transmitter configuration data during operation of the mobile transmitter; and

a radio frequency transmitter for radio transmission of the serial digital data in dependence upon stored mobile transmitter configuration data.

18. A base station for monitoring a patient via physiological data comprising:

an antenna array for receiving the wireless transmission from the mobile transmitter;

a receiver including an input coupled to the antenna array, an interface having an output for digital data derived from the radio transmission and an input of mobile transmitter configuration data, and an optical receiver and transmitter for establishing a bi-direction optical link for transmitting mobile transmitter configuration data to an adjacent mobile transmitter; and

a monitor coupled to the interface for display of the physiological data and for effecting transfer of mobile transmitter configuration data via the bi-directional optical link during operation of the mobile transmitter.